

REVISED PUBLIC NOTIFICATION RULE TAKES EFFECT MAY 6, 2002

As required by the 1996 Safe Drinking Water Act Amendments, the USEPA revised the public notification requirements in April of 2000. These changes take effect on May 6, 2002 and are expected to make the process easier and more effective.

Consumers will receive quicker notification in emergencies and water systems will be allowed to create shorter and fewer notices that are easier to understand. Under this revision, water suppliers are required to inform the public/consumers within 24 hours of any situation that may pose an acute health risk due to short-term exposure. Previously, water suppliers had up to 72 hours to provide this information. Water suppliers will also be allowed to combine notices for less serious problems and make the notices shorter and easier to understand.

The State and water systems must now use concise standard language and notices. The new requirements make the standard health effects language more concise and give water systems a standard set of procedures to follow. It will also make notices easier for water systems to issue while providing better information to the public.

The revised regulation separates public notices into three tiers:



Immediate notice (Tier 1): For violations and situations that have a significant potential for serious adverse health effects due to short-term exposure. These notices are required within 24 hours of the violation. Violations and situations include (but are not limited to) **fecal coliform MCL violation or failure to test for fecal coliform after a total coliform positive; nitrate/nitrite MCL violation or failure to take confirmation sample; a waterborne disease outbreak or emergency; or situations determined by the primacy agency.**



Notice as soon as possible (Tier 2): For violations and situations that have the potential to be serious, but are not immediate, adverse health effects. These notices are required within 30 days or as soon as possible. An extension of up to three months for violations that have been resolved (State primacy discretion). Violations and situations include (but are not limited to) **all other MCL, MRDL, and TT violations not included in Tier 1 requirements; monitoring and testing procedures violations (as determined by the primacy agency); and failure to comply with variance or exemption requirements.**



Annual Notice (Tier 3): All other violations and situations that are not Tier 1 or Tier 2. These notices are required within 12 months of the violation and may be included as part of a single annual report (such as in some cases, the consumer confidence report). Violations and situations include (but are not limited to) **all other monitoring or testing procedures violations not included in Tier 1 or Tier 2 notices; system operating under an variance or exemption; and special public notices.**

WHAT INFORMATION MUST BE INCLUDED IN THE NOTICE?

- Description of the violation that occurred, plus the potential health effects;
- Population at risk & if alternate water supplies need to be used;
- What the water system is doing to correct the problem;
- Actions consumers can take;
- When the violation occurred and when the system expects it to be resolved;
- How to contact the water system for more information; and
- Language encouraging broader distribution of the notice.

To help public water systems meet this revised regulation, EPA and the Association of State Drinking Water Administrators (ASDWA) have issued a "Public Notification Handbook." The "Handbook" provides templates for notices and other aids to assist water systems with developing notices for violations. The "Handbook" and copies of the final public notification regulation and other public notification information may be obtained from EPA's website at www.epa.gov/safewater/pn.html.

For information on how the revised public notification requirements have changed in Hawaii, call the Safe Drinking Water Branch at (808) 586-4258.

“WHAT IS A SANITARY SURVEY? A LOOK AT THE ELEMENTS OF A SURVEY”

Sanitary surveys will identify **sanitary risks** that might interrupt the “multiple barrier” approach to drinking water protection. The multiple barrier protection system is intended to provide several barriers of protection and may include: watershed/wellhead protection/source water protection, treatment, disinfection, distribution system. The sanitary survey would determine if any of these barriers had failed. A sanitary survey will generally include eight (8) elements: (1) Source, (2) Water Treatment, (3) Distribution System, (4) Finished Water Storage, (5) Pumps/Pump Facilities and Controls, (6) Monitoring/Reporting/Data Verification, (7) Water System/ Management/Operations, and (8) Operator Compliance with State Requirements.

In this issue of “The Water Spot 2002,” we continue our series on the elements of a sanitary survey by looking at the second element, drinking water treatment.

SANITARY SURVEY ELEMENT No. 2 -- DRINKING WATER TREATMENT

A sanitary survey should thoroughly evaluate all water treatment processes, as well as the operation, maintenance, and management of the water treatment facilities that ensure the safe production of water to consumers.

The following is from the EPA/STATE Joint Guidance on Sanitary Surveys; Model Qualifications Criteria Program - Need-to-Know Criteria to Conduct a Sanitary Survey; and Learner’s Guide - How to Conduct a Sanitary Survey of Small Water Systems.

PURPOSE OF WATER TREATMENT: To condition, modify, or remove undesirable impurities or pathogens to provide water that is safe, palatable, and acceptable to consumers. National standards for some of the impurities are considered important to the health of consumers and are set through the Federal Safe Drinking Water Act. If these contaminants are present in excess of the established MCL’s, the water must be treated to reduce the levels. Some impurities that affect the aesthetic qualities of the water are listed in the SDWA as guidelines. Treatment or modification of the water to comply with MCL’s is highly recommended. Water treatment process may include: (1) disinfection; (2) turbidity removal; (3) corrosion control; and (4) organic contaminant removal.

DURING A SANITARY SURVEY, THE INSPECTOR(S) SHOULD OBTAIN INFORMATION THAT ALLOWS:

- (1) The review of key components of the water treatment processes such as the chemical feed systems, coagulation, flocculation, and sedimentation processes, filtration systems, and disinfection.
- (2) The identification of key data items required to evaluate sanitary survey risks at the water treatment plant, such as turbidity, pH, alkalinity, and chlorine residuals.
- (3) The recognition of sanitary risks of the water treatment processes as it relates to the physical facilities, operation and maintenance, and management. Issues may include inadequate process control testing, poor maintenance procedures, staffing and funding deficiencies, and cross-connections.
- (4) The identification of safety issues that impact the operations staff and could affect the facilities’ ability to perform effectively. Safety issues may include chemical handling, chemical storage, and confined spaces.
- (5) The review of regulatory issues that are appropriate to each specific process to determine their relationship to sanitary risks.

CHEMICAL FEED SYSTEMS

Chemical feed systems are common to all types of treatment plants. Types of chemical feed systems include: liquid feed pumps and dry feeders. Proper operation and maintenance of chemical feeders is essential to the performance of the treatment plant. When evaluating chemical feed systems, consider the following:

- (1) What chemicals are used? Amounts used? Where are the application points of the chemicals used?
- (2) Does the system have adequate laboratory facilities?
- (3) What is the condition of the chemical feed equipment? Is equipment calibrated? Are instrumentation and controls for the process adequate, operational, and utilized?

- (4) Is chemical storage adequate and safe?
- (5) Do daily operating records reflect chemical dosages and total quantities used? Is chemical feed system tied to flow?
- (6) Is there an operating 4-in-1 valve or equivalent on each feed pump?
- (7) Is there a Hazard Communication Program in place? Are there appropriate safety equipment and personal protection equipment (PPE) available and in use? Are operators trained to use equipment?
- (8) Is building as clean and as dry as possible?

DISINFECTION

Disinfection is the process of destroying a large portion of the microorganisms in water, with the probability that all pathogenic bacteria will be killed in the process. Many failures to meet the requirements of the drinking water standards are directly related to inadequate disinfection. The most common method of disinfection use in water systems is chlorination. When evaluating the chlorination process, consider the following:

Dosage and Residuals (applicable to all forms of chlorination)

- (1) Can the operator answer basic questions about the disinfection process?
- (2) Have there been any interruptions in the disinfection process?
- (3) Is there a proper residual entering the distribution system at all times? What disinfection residual is maintained?
- (4) Is the contact time between point of disinfection and first customer adequate? How is disinfection residual measured?
- (5) Are pH and temperature of the water at the point of chlorine application measured and recorded daily?

Hypochlorination Systems

- (1) What kind of hypochlorite is used?
- (2) Is the solution tank covered to minimize corrosive vapors?
- (3) Are there adequate spill containment provisions? Are safety practices followed during chemical handling and mixing?

Gas Chlorination Systems

- (1) Are there means of leak detection? At what detection concentration are they set and have automatic detectors been tested recently? Is the sensor tube for the automatic detector near the floor level, and is it screened?
- (2) Is the chlorination equipment properly contained?
- (3) Is the chlorination room vented at floor level with adequate make up air supply coming from the ceiling across the room? Is the vent switch located outside and by the door?
- (4) Does the door in the chlorination room open out and have a panic bar and a window?
- (5) Are there any cross-connections in the chlorine feed make-up water or injection point?
- (6) Is there an alarm tied to interruptions in the chlorine feed?
- (7) Does the system use automation; pace with flow, chlorine residual analyzer, or other system to adjust feed rates? Does it work?
- (8) **If there is more than one cylinder, are they manifolded with an automatic switch-over to prevent running out of chlorine? Are the cylinders on a working scale?**
- (9) Are the tanks in use a quarter turn open with a wrench in place for quick turnoff?
- (10) **Are the cylinders properly marked and restrained to prevent falling?**
- (11) Does the facility transport gas chlorine cylinders? If so, are the requirements of 49 CFR parts 171 and 172 followed?
- (12) Is the proper concentration of ammonia available for testing for leaks?
- (13) Are there adequate leak containment provisions?
- (14) Are safe practices followed during cylinder changes and maintenance? How many individuals are present when the chlorine cylinders are changed?
- (15) What type of respiratory protection is used? Is there an emergency plan, and when was it last practiced?
- (16) What is the operating condition of the chlorinator?
- (17) Is redundant back-up equipment available, and are there adequate spare parts?
- (18) Are the appropriate lighting, guards, and railings, etc. in place, and are there safety concerns eg. electrical hazards?



TURBIDITY REMOVAL - CONVENTIONAL TREATMENT

Under the Surface Water Treatment Rule, community and non-community water systems that utilize surface water sources or groundwater under the direct influence of surface water must meet criteria for the removal and/or inactivation of Giardia cysts and viruses. Turbidity removal is one of the treatment processes that is a key step in meeting the SWTR requirement. The most widely utilized technology for the removal of turbidity and microbial contaminants from surface water is conventional treatment. The conventional treatment process includes coagulation, flocculation, and sedimentation followed by filtration. When evaluating the turbidity removal process, consider the following:

Coagulation - Rapid Mix

- (1) Is a coagulant used at all times the plant is in operation?
- (2) What type and combination of coagulants are used? For what purpose is each of the coagulant chemicals being used?
- (3) How is the dosage of each coagulant chemical calculated?
- (4) Is there a process control plan for coagulation addition? Is the rapid mix process adequate?

Flocculation

- (1) Is the flocculation process adequate?

Sedimentation

- (1) Is the sedimentation process adequate?

Filtration (applicable to all forms of filtration)

- (1) Is the filtration process performing adequately? Is adequate pretreatment utilized?
- (2) Are there rapid fluctuations in the flow through the filter? What controls and assessments are used to evaluate the performance of each filter? Are instrumentation and controls for the process adequate, operational, and in service?
- (3) Are the filters and related equipment operated properly and in good repair? What initiates a backwash and is an SOP for this procedure in place?

Filtration - Slow Sand

- (1) What pretreatment is used if any? What method is used to clean the slow sand filters?
- (2) **Are there redundant slow sand filters? Is the slow sand filter covered and light free?**

Filtration - Diatomaceous Earth

- (1) What levels of precoat and continuous body feed are added?
- (2) Are there interruptions of flow? When is backwashing initiated?

Filtration - Bag/Cartridge

- (1) What type of pretreatment is used?
- (2) What is the micron rating for the final unit?
- (3) What is average and shortest times between filter replacements?
- (4) Is there a manufacturer's challenge for Giardia removal for the filter and housing being used?



Filtration - Membranes

- (1) What type of membrane is used and what is its intended use? What type of pretreatment is used?
- (2) What safeguards exist to warn operators of membrane failure? What is the fouling rate and life of the membranes?
- (3) What is the % recovery and what technique is used for backwash? Describe the frequency of cleaning and disposal of cleaning fluids and the brines.
- (4) What is the condition of the plant, gauges, and appurtenances?

CORROSION CONTROL

Corrosion causes the deterioration of pipe materials and generally occurs in drinking water distribution systems by the principle mechanism of dissolution. The dissolution of pipe materials occurs when favorable water chemistry and physical conditions combine. Altering the water quality characteristics through treatment may effectively reduce some forms of corrosive activity. Optimal corrosion control treatment must be implemented by some water systems to meet lead and copper action levels. When evaluating the corrosion control process, consider the following:

- (1) What are the results of current lead and copper sampling?
- (2) What are the characteristics of the water entering and leaving the treatment plant?
- (3) What sampling is conducted in the distribution system as part of the corrosion control program?
- (4) Is the test equipment to monitor the data appropriate and in good working order?

ORGANIC REMOVAL

The purpose of organic removal is to remove toxic substances. Adsorption is primarily used to reduce organics that contribute to taste and odor, organics that contribute to THM formation, or other organics contaminants. The two types of activated carbon that are utilized in this process are powdered activated carbon and granular activated carbon. When evaluating an organic removal process, consider the following:

Carbon Adsorption - Activated Carbon

- (1) Why is activated carbon used? Which process is used?
- (2) What testing is performed to determine the effectiveness of the activated carbon?

Powdered Activated Carbon (PAC)

- (1) Have they had any problems with black water? How often are the feeders calibrated?
- (2) Do the operators have proper safety equipment? Is the PAC stored properly?

Granulated Activated Carbon (GAC)

- (1) Is the backwash adequate?
- (2) What is the depth of the GAC?



Aeration

This process is primarily found at groundwater facilities. Aeration is the process by which air and water are brought together in close contact with the intent of transferring volatile substances from the water to the air. Aeration may be utilized for reducing volatile organic compounds and taste and odor-producing compounds (such as hydrogen sulfide) and/or to oxidize organic and inorganic chemicals. When evaluating the aeration process, consider the following:

- (1) What type of aeration system is used? What parameters are monitored to evaluate the performance of the process?
- (2) What types of contaminants are in the vicinity that could be pulled into the air supply?
- (3) What types of operational problems has the facility experienced that could contribute to low performance of the aeration device? What is the condition of the aerator, both inside and out?
- (5) After treatment in the aerator, is the effluent disinfected adequately before it is introduced into the water distribution system?

2002 ANNUAL AWWA - HAWAII SECTION CONFERENCE



The theme for the 28th Annual, Hawaii Section Conference is "Exploring Development Opportunities for Safe Water." The conference will be held April 30 and May 1-3, at the Renaissance Ilikai Hotel, and offers a strong technical program relating to these important issues. We are fortunate to have great participation from speakers in Hawaii as well as mainland speakers from Alaska to Florida.

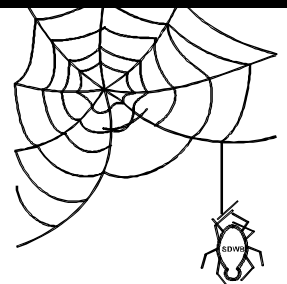
On the afternoon of May 1st, Barry Pollock, EPA's Project Officer for the Hawaii Drinking Water Program will present "**Vulnerability Assessments/Update on Drinking Water Regulations.**"

For more information or to register for the conference, please contact Lorrie Shiraishi at (808) 527-5270 or (808) 527-5123 (fax) or Thelma Kimura at (808) 532-6516 or (808) 550-9069 (fax).

SDWB WEBSITE UPDATES

The Safe Drinking Water Branch has replaced the 2001 Operator Certification Application and Examination forms with the 2002 Operator Certification Application and Examination forms. Distribution System Operators (DSO) and Water Treatment Plant Operators (WTPO) who need to apply for certification or to take the certification examination may now download the application forms from the SDWB website at:

<http://www.hawaii.gov/health/eh/sdwb>



Public Water Systems Operator & Management Training Courses

**Spring 2002: Statewide, one-day workshops
for professional development and CEU credit**

**Sponsored by:
Hawaii Department of Health, Safe Drinking Water Branch,
and the U.S. Environmental Protection Agency**

**Presented by:
Rural Community Assistance Corporation**

Public drinking water system operations, maintenance, supervisory, and managerial personnel are invited to attend and participate in the one-day professional development workshops scheduled for locations around the state.

Three different workshops are being offered around the state from February through June 2002 for Continuing Education Credits (CEUs) for all water system personnel. Each workshop is designed to provide five training contact hours. Note: These workshop topics will change after June 2002.

One workshop primarily for supervisory & managerial staff and other interested personnel, will focus on **TECHNICAL, MANAGERIAL AND FINANCIAL CAPACITY AND THE WELLHEAD PROTECTION PROGRAM**. The emphasis will be placed upon awareness of the Capacity Demonstration and Evaluation procedures and improving TMF capacity in your water system. The Wellhead Protection Program will also be highlighted.



Where/when: TMF Capacity and Wellhead Protection Workshop

Lihue, Kauai War Memorial Conv. Hall - April 25, 2002 * Keahole-Kona, NELHA Conference Rm. - June 4, 2002*
Wailuku, State Office Building - May 14, 2002 *

A second workshop for water treatment operators and others interested in learning about water treatment will focus on **WATER TREATMENT PROCESS MONITORING AND CONTROL**. The emphasis will be on effective process monitoring, control and treatment optimization. Automated water treatment monitoring and control options are to be highlighted.



Where/when: Treatment Process Monitoring and Control

Kaunakakai, Kulana 'Oiwi - April 15, 2002 * Kaunakakai, Kulana 'Oiwi - June 3, 2002 *
Lihue, Kauai War Memorial Conv. Hall - May 7, 2002 * Pearl City, DOH Laboratory Facility - June 7, 2002 *
Wailuku, State Office Building - May 22, 2002 *

A third workshop for distribution system operators, treatment operators and other interested personnel will focus on **MONITORING REQUIREMENTS OF THE SAFE DRINKING WATER ACT**. The emphasis will be on awareness of required monitoring, sampling frequency, analytical and reporting requirements. Special sampling such as repeat sampling, Phase II & V sampling, and lead & copper sampling will be included.



Where/when: MONITORING REQUIREMENTS OF THE S.D.W.A.

Wailuku, State Office Building - April 17, 2002 * Pearl City, DOH Laboratory Facility - June 13, 2002 *
Lihue, Kauai War Memorial Conv. Hall - April 18, 2002 * Keahole-Kona, NELHA Conference Rm.- June 18, 2002 *
Kaunakakai, Kulana 'Oiwi - April 22, 2002 *
Hilo, Environmental Health Facility - April 24, 2002 *
Pearl City, DOH Laboratory Facility - May 16, 2002 *
Lihue, Kauai War Memorial Conv. Hall - May 21, 2002 *
Kaunakakai, Kulana 'Oiwi - June 10, 2002 *

*** Time: 9:30 a.m. to 3:30 p.m. - all workshops/locations.**
Note: TBA - To be announced in a later update of this schedule.

The number of participants in some locations may be limited by classroom capacity. First preference to attend will be given according to earliest date of registration; once class capacity is reached, registration will be closed.

There is a required, non-refundable registration fee** of \$20.00 for each person to attend each workshop. NOTE: A bank cashier's check or postal money order made payable to the "State of Hawaii," accompanying the registration form below, are the only acceptable methods of payment. Requisitions, purchase orders, personal checks or cash will not be accepted. The deadline for workshop registration is a postmark of not less than ten days before the scheduled date of the particular workshop .

For more information contact Glenn Johansen at (808) 896-3886, or send e-mail to gjohanse@rcac.org. Completed registration must be mailed with fee payment. *Hawaii State agencies: call for registration fee invoice instructions.*

Certified Operators: Don't miss the opportunity to earn the CEUs needed before the deadline to reapply for certification (10/17/02 for some WTPOs) sneaks up on you. Register now!

This registration form may be duplicated.

RCAC WORKSHOP REGISTRATION FORM

Desired workshop title:_____

Workshop location and date:_____

Name:_____ Work phone:_____

Organization:_____

Public Water System ID Number:_____ and Name (if different from above)

P.W.S. Name:_____

Mailing address:_____
(Work) _____

Fax number:_____ E-mail address:_____

Check here: [] **\$20.00 registration fee** payable to "State of Hawaii" enclosed.**
(per person, per workshop)

Bank cashier's check or postal money order number:_____ (no personal checks)

Mail this form with fee payment to:
(at least ten days in advance)

**RCAC Workshop Registration
234 Waianuenue Ave., Suite 107
Hilo, Hawaii 96720**

The Water Spot 2002 is published by the Safe Drinking Water Branch, Environmental Management Division of the Hawai'i State Department of Health and is distributed to water purveyors, water system operators, staff, consultants, and other interested parties.

*The Water Spot 2002 may also be viewed on the Safe Drinking Water Branch's web site at:
<http://www.hawaii.gov/health/eh/sdwb>*

Please send your
suggestions, ideas,
questions or
comments to:

THE WATER SPOT 2002
Safe Drinking Water Branch
State Department of Health
919 Ala Moana Blvd., Room 308
Honolulu, Hawaii 96814

OR Fax us at (808) 586-4370, Attn: "THE WATER SPOT 2002"

SDWB WEB SITE:
<http://www.hawaii.gov/health/eh/sdwb>
HISWAP WEB SITE:
Currently under Construction



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